

2 COMBINED MONITORING REPORT

In accordance with Title V Permit Standard Condition 1.F, BAAQMD Rule 8-34-411 and §60.757(f) in the NSPS, this report is a Combined Semi-Annual Title V Report and Partial 8-34 Annual Report that is required to be submitted by Sonoma Central. The report contains monitoring data for the operation of the landfill gas collection and control system (GCCS). The operational records have been reviewed and summarized. The timeframe included in this report is February 1, 2017 through July 31, 2017. The following table lists the rules and regulations that are required to be included in this Combined Report.

TABLE 2-1 - COMBINED REPORT REQUIREMENTS

Rule	Requirement	Location in Report
8-34-501.1 & §60.757(f)(4)	All collection system downtime, including individual well shutdown times and the reason for the shutdown.	Section 2.1, Appendices C & D
8-34-501.2, 8-34-501.11, 8-34-509, §60.757(f)(2),(3)	All emission control system downtime and the reason for the shutdown.	Section 2.2, Appendix D, E & F
8-34-501.3, 8-34-507, & §60.757(f)(1)	Continuous temperature for all operating flares and any enclosed combustor subject to Section 8-34-507.	Section 2.3, Appendix G
8-34-501.4, 8-34-505, & 8-34-510	Monitoring and Testing performed to satisfy any of the requirements of this rule.	Sections 2.6 & 2.12
8-34-501.5	Monthly landfill gas flow (LFG) rates and well concentration readings for facilities subject to 8-34-404.	Section 2.5, 2.13 Appendix N
8-34-501.6, 8-34-503, 8-34-505, 8-34-506, §60.757(f)(5)	For operations subject to Section 8-34-503 and 8-34-506, records of all monitoring dates, leaks in excess of the limits in Section 8-34-301.2 or 8-34-303 that are discovered by the operator, including the location of the leak, leak concentration in parts per million by volume (ppmv), date of discovery, the action taken to repair the leak, date of the repair, date of any required re-monitoring, and the re-monitored concentration in ppmv.	Section 2.6 & 2.7, Appendix I & J
8-34-501.7	Annual waste acceptance rate and current amount of waste in-place.	Section 2.10 & Appendix L
8-34-501.8	Records of the nature, location, amount, and date of deposition of non-degradable wastes, for any landfill areas excluded from the collection system requirement as documented in the GCCS Design Plan.	Section 2.11
8-34-501.9, 8-34-305, 8-34-505, §60.755(a)(5) §60.757(f)(1)	For operations subject to Section 8-34-505, records of all monitoring dates and any excesses of the limits stated in Section 8-34-305 that are discovered by the operator, including well identification number, the measured excess, the action taken to repair the excess, and the date of repair.	Section 2.12, Appendices M & N

Rule	Requirement	Location in Report
8-34-501.10, 8-34-508, §60.757(f)(1)	Continuous gas flow rate records for any site subject to Section 8-34-508.	Section 2.13, Appendix O
8-34-501.11, 8-34-509	For operations subject to Section 8-34-509, records or key emission control system operating parameters.	Section 2.2.2
8-34-501.12	The records required above shall be made available and retained for a period of 5 years.	Section 1.2
§60.757(f)(2)	Description and duration of all periods when the gas stream is diverted from the control device through a bypass line or the indication of bypass flow as specified under §60.756.	Section 2.2.1
§60.757(f)(6)	The date of installation and the location of each well or collection system expansion added pursuant to paragraphs (a)(3), (b), (c)(4) of §60.755.	Section 2.1.2, Appendices A & C
§60.10 (d)(5)(i)	Startup, Shutdown, Malfunction Events	Section 4.0, Appendices C, D, E & F

2.1 Collection System Operation (BAAQMD 8-34-501.1 & §60.757(f)(4))

Appendix A contains a current map of Sonoma Central's existing GCCS. Section 2.1.1 includes the GCCS downtime for the reporting period. The information contained in Section 2.1.2 includes wellfield shutdown, start-up and malfunction (SSM) event information. Refer to Appendix C for the shutdown times and the reason for the shutdown.

2.1.1 Collection System Downtime

During the period covered in this report, the GCCS was not shut down for more than five days on any one occasion. The downtime for the reporting period of February 1, 2017 through July 31, 2017 was 9.97 hours. The total downtime for the 2017 calendar year is 11.38 hours, out of an allowable 240 hours per year. Appendix C contains the GCCS Downtime, Appendix E contains the A-3 Flare SSM Log for the reporting period, and Appendix F contains the IC Engine SSM Log for the reporting period.

2.1.2 Well Start-Up, Shutdown, and Malfunction Log

There were 24 wellfield SSM events during the reporting period. Refer to Appendix D, Wellfield SSM Log, for further details.

2.2 Emission Control Device Downtime (BAAQMD 8-34-501.2 & §60.757(f)(2),(3))

The emission control system consists of 1 Landfill Gas-to-Energy (LFGTE) facility, 10 internal combustion (IC) engines (S-4, S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13 and S-14) and 1 enclosed backup flare (A-3). Engine No. 10 (S-14) is on long-term standby pursuant to BAAQMD Application No. 22513.

Raw landfill gas (LFG) was not emitted during the reporting period.

The SSM logs for the A-3 Flare and the IC Engines are located in Appendices E and F, respectively.

2.2.1 LFG Bypass Operations (§60.757(f)(2))

Title 40 CFR §60.757(f)(2) is not applicable at Sonoma Central because a by-pass line has not been installed. LFG cannot be diverted from the control equipment.

2.2.2 Key Emission Control Operating Parameters (BAAQMD 8-34-501.11 & 8-34-509)

The IC engines (S-4, S-5, S-6, S-7, S-9, S-10, S-11, S-12, S-13 and S-14) are subject to key emission control system operating parameters. Pursuant to Permit to Operate (PTO) Condition 19933 Part 11 issued May 4, 2016 (valid for the reporting period through June 1, 2017), Sonoma Central must operate each IC Engine at the fuel-to-air ratio established during the most recent compliance source test. In addition, the exhaust oxygen concentration for each engine must be maintained within a range of 6.4 to 8.3 percent as established by Permit Application No. 9277. In order to demonstrate compliance with this requirement, the exhaust gas oxygen concentration for each engine is to be measured and recorded in a District approved log on at least a monthly basis. IC Engine S-14 was in long-term standby mode during the reporting period and did not operate.

On July 1, 2017, the BAAQMD issued the new annual PTO applicable for the reporting period of July 1, 2017 through June 1 2018. Per the new PTO, Condition 19933 Part 11 has been removed and is no longer applicable. However since it remains part of the Title V permit, Sonoma Central will continue reporting to comply with the Title V permit until such time that it is removed from the Title V permit. Sonoma Central will no longer report, the fuel-to-air ratio for BAAQMD PTO purposes.

Exhaust oxygen concentrations for all IC engines were in compliance with PTO Condition No. 19933 Part 11 during the applicable reporting period. The Monthly Exhaust Oxygen Content Log is included in Appendix Q.

2.3 Temperature Monitoring Results (8-34-501.3, 8-34-507, & §60.757(f)(1))

The A-3 Flare combustion zone temperature while the flare is in operation must not drop below 1,400 degrees Fahrenheit (°F) or 50°F below the average combustion temperature during the most recent source test. Compliance with temperature limitations is determined on the basis of the 3-hour rolling average temperature.

The combustion zone temperature of the A-3 backup flare is continuously monitored during operation. The temperature is recorded by a Yokogawa data system. There were no temperature deviations recorded during the reporting period. Appendix G contains the A-3 Flare Temperature Deviation/Inoperative Monitor/Missing Data Report for February 1, 2017 through July 31, 2017.

2.4 Monthly Cover Integrity Monitoring (BAAQMD 8-34-510)

The Cover Integrity Monitoring was performed on a monthly basis during the reporting period. The cover integrity monitoring was performed on the following dates:

- February 26, 2017;
- March 30, 2017;
- April 27, 2017;
- May 30, 2017;
- June 27, 2017; and
- July 26, 2017.

The Monthly Cover Integrity Monitoring reports are included in Appendix H.

2.5 Less Than Continuous Operation (BAAQMD 8-34-501.5)

Sonoma Central does not operate under BAAQMD Regulation 8-34-404 (Less Than Continuous Operation) and is therefore not required to submit monthly LFG flow rates.

2.6 Surface Emissions Monitoring ((BAAQMD 8-34-501.6, 8-34-506, §60.757(f)(5) & California Air Resources Board Assembly Bill 32 Methane Control Measure (CARB AB-32 LF MCM))

Quarterly Surface Emissions Monitoring (SEM) was conducted for First and Second Quarter 2017 on the following dates:

- First Quarter 2017 – March 8, 9, 10, 15, and April 6, 2017; and
- Second Quarter 2017 – May 1, 2, 3, 11, and 19, 2017.

Refer to the First Quarter and Second Quarter 2017 SEM Reports, located in Appendix I, for detailed results.

2.7 Component Leak Testing (BAAQMD 8-34-501.6 & 8-34-503)

Quarterly component leak testing, pursuant to BAAQMD Regulation 8-34-503, was conducted during the reporting period on the following dates:

- Second Quarter 2017 – April 25 and 28, 2017 and June 28, 2017

No leaks were detected during the quarterly monitoring events. Refer to Appendix J, Quarterly LFG Component Leak Monitoring Forms, for detailed results for the quarterly monitoring events.

2.8 Sulfur Monitoring Records (BAAQMD Condition #4044 Part 7 & 18)

Pursuant to Permit to Operate (PTO) Condition 4044 Part 7 issued May 4, 2016 (valid for the reporting period of May 4, 2016 through June 1, 2017), the concentration of total reduced sulfur compounds in the LFG must not exceed 1,300 ppmv. Total sulfur content in LFG was analyzed during the annual gas characterization tests and is monitored quarterly for compliance, pursuant to Condition 4044 Parts 7 and 18. The concentration of total reduced sulfur compounds in the LFG did not exceed 1,300 ppmv during the applicable reporting period.

On July 1, 2017, the BAAQMD issued the new annual PTO applicable for the applicable reporting period of July 1, 2017 through June 1, 2018. Per the new PTO, Condition 4044 Part 7, the concentration of total reduced sulfur compounds in the LFG has been revised to comply with BAAQMD Regulation 9-1-302 and must not exceed 300 ppmv (dry). The concentration of total reduced sulfur compounds in the LFG did not exceed 300 ppmv for the applicable reporting period.

Refer to Appendix K for additional details.

2.9 Dust Suppression Records (BAAQMD Condition #4044, Part 19)

Republic confirms that water was used as a dust suppressant pursuant to Permit Condition 4044 Part 19. Records are available upon request.

2.10 Waste Acceptance Records (BAAQMD 8-34-501.7)

During the reporting period, Sonoma Central did not exceed the waste acceptance limits for the total maximum landfill capacity of 19.59 million tons, the daily waste acceptance of 2,500 tons per day (tpd), and the annual waste acceptance of 897,500 tons per year (tpy), in accordance with Condition 4044 Part 1. The total waste accepted during the reporting period was 156,249 tons. As of July 31, 2017, the total waste in place is 15,212,113 tons. Daily waste tonnage acceptance records are available upon request at the site. A monthly waste tonnage acceptance record summary is provided in Appendix L.

2.10.1 Low-VOC Content Soil Acceptance (BAAQMD Condition #4044, Part 20)

Republic confirms that no VOC contaminated (greater than 50 ppmv) soil was accepted during the reporting period.

2.11 Non-degradable Waste Acceptance Records (BAAQMD 8-34-501.8)

The GCCS Design Plan for Sonoma Central does not denote non-degradable waste areas that are excluded from the collection system. Therefore, BAAQMD Regulation 8-34-501.8 is not applicable.

2.12 Wellhead Monitoring Data (BAAQMD 8-34-305.1, 8-34-305.2, 8-34-305.4, §60.755(a)(5), §60.757(f)(1))

Wellhead monitoring was performed on a monthly basis pursuant to 8-34-505. The well readings for February 1, 2017 through July 31, 2017 are included in Appendix M. Each well was monitored in accordance with the following requirements:

- 8-34-305.1 – Each wellhead shall operate under a vacuum;
- 8-34-305.2 – The LFG temperature in each wellhead shall be less than 55 degrees Celsius (°C) (131 degrees Fahrenheit [°F]); and
- 8-34-305.4, §60.755(a)(5), §60.756(a)(2) – The oxygen concentration in each wellhead shall be less than 5 percent by volume.

Wellhead monitoring was performed on the following dates:

- February 1, 8, 13, 14, 23, and 24, 2017;
- March 3, 8, 9, 13, 17, 21, and 30, 2017;
- April 5, 6, 11, 14, 20, 25, and 28, 2017;
- May 2, 3, 16, 30, and 31, 2017;

- June 6, 7, 8, 12, 19, and 21, 2017; and,
- July 6, 10, 11, 19, 21, 25, 26, and 27, 2017.

2.12.1 Wellhead Exceedances (BAAQMD 8-34-501.9 & §60.757(f)(1))

There were 115 wells with readings that exceeded the limits set forth in BAAQMD Regulation 8-34-305 during the reporting period. Corrective action for the wells was initiated within the required 5 day time period and re-monitoring was completed within 15 days of the deviation pursuant to BAAQMD Regulation 8-34-414. See Appendix N, Wellfield Deviation Log, for further details.

2.12.1.1 Higher Operating Values (HOV) Wells

Sonoma Central requested exemption from BAAQMD Rule 8-34 wellhead standards and alternate wellhead monitoring limits for 11 extraction wells. BAAQMD approved the alternate wellhead monitoring limits for these extraction wells in Authority to Construct (ATC) No. 16582 issued December 19, 2014. Permit Condition 4044 Part 5b was added to the PTO allowing up to 15 percent oxygen in gas extraction V-117, EC-9.1, EC-15, EC-19, EC-24, EC-25, EC-26, and EC-26.1. All the wells originally approved have been decommissioned except EC-15 and EC-19.

2.13 Gas Flow Monitoring Results (BAAQMD 8-34-501.10, 8-34-508, & §60.757(f)(1))

The A-3 Backup Flare LFG flow rate is measured and recorded when the flare is in operation. The flare flow meter meets the requirements of BAAQMD Regulation 8-34-508 by recording data at least every 15 minutes. The flow meter is maintained and calibrated pursuant to manufacturer's recommendations. The flow meter sends a signal to a Yokogawa digital recorder. The A-3 Backup Flare operated for 3,260.83 hours during the reporting period as a backup to the IC Engines.

The IC Engine LFG flow is recorded on a Digital Chart Recorder. The Yokogawa data recorder records LFG flow every 120 seconds and data is downloaded and saved to a compact flash card. The flare flow meter meets the requirements of BAAQMD Regulation 8-34-508 by recording data at least every 15 minutes. The flow meter is maintained and calibrated pursuant to manufacturer's recommendations.

During the reporting period, the A-3 Backup Flare remained in compliance and did not exceed the annual heat input limit set by permit conditions. In accordance with Permit Condition 4044, Part 13, the heat input to the A-3 Backup Flare did not exceed 547,680 million BTU per year (MMBtu/yr) during the reporting period.

During the reporting period none of the IC engines exceeded the daily or annual heat input limits. Pursuant to Permit Condition 19933 Part 10, the heat input to each IC engine shall not exceed 252.6 MMBtu/day, or 92,199 MMBtu/year, and is summarized monthly. Phase I, Phase II, and Phase III LFG daily flow records are divided by the number of engines that operated to calculate heat input per engine per day (MMBtu/unit).

Summaries of the monthly LFG flow rates and heat input totals for the IC Engines and A-3 Backup Flare are included in Appendix O.

2.14 Compliance with §60.757(f)(6)

"The date of installation and the location of each well or collection system expansion added pursuant to (a)(3), (b), (c)(4) of §60.755."

There were no well start-ups and 21 wells decommissioned during the reporting period. See Appendix D, Wellfield SSM Log, for further details.

2.15 Volume of Landfill Gas Converted in S-15

The LFG compression plant (S-15) is a pilot scale unit designed to operate as a closed loop system with all waste gases vented to either the flare or IC engines pursuant to Permit Condition 23087. The unit was completed in February 2009. Compressed natural gas (CNG) produced at the Central Disposal Site has historically been used to fuel select vehicles in the Sonoma Central Transit bus fleet. The plant has been shut down since October 2013 and has not operated during the reporting period.

4 START-UP, SHUTDOWN, MALFUNCTION REPORT

4.1 SSM Log for the GCCS at Sonoma Central

The NESHAP contained in 40 CFR Part 63, AAAA for MSW landfills to control hazardous air pollutants include the regulatory requirements for submittal of a Semi-Annual report (under 40 CFR §63.10(d)(5) of the general provisions) if an SSM event occurred during the reporting period. The reports required by §63.1980(a) of the NESHAP and §60.757(f) of the NSPS summarize the GCCS exceedances. These 2 Semi-Annual reports contain similar information and have been combined as allowed by §63.10(d)(5)(i) of the General Provisions.

NESHAP 40 CFR part 63, AAAA became effective on January 16, 2004. Those SSM events that occurred during the NSPS Semi-Annual reporting period are reported in this section (February 1, 2017 through July 31, 2017). The following information is included as required:

- During the reporting period, 27 A-3 Backup Flare SSM events occurred. The A-3 Backup Flare was shut down during the reporting period due to the reasons noted in Appendix E, Flare SSM Log.
- During the reporting period, 134 SSM events occurred at the eight IC Engines (S-4, S-5, S-6, S-7, S-9, S-10, S-11, S-12 and S-13). IC Engine S-14 did not operate for the duration of the reporting period. The IC Engines were shut down and restarted during the reporting period due to the reasons noted in Appendix F, IC Engine SSM Log.
- During the reporting period, 24 Wellfield SSM events occurred. Details are included in Appendix D, Wellfield SSM Log.
- There were 185 events in total. In all 185 events, automatic systems and operator actions were consistent with the standard operating procedures contained in the SSM Plan. There were no deviations from the SSM plan.
- Exceedances were not identified during the reporting period in any applicable emission limitation in the landfills NESHAP (§63.10(d)(5)(i)).
- Revisions of the SSM Plan to correct deficiencies in the landfill operations or procedures were neither required, nor prepared (§63.6(e)(3)(viii)).